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VARIOUS.

MARBLE.

The age of the celebrated statuary marble of Carrara has hitherto been considered to be without doubt Jurassic. M. H. Coquand, however, has by recent stratigraphical researches convinced himself that they are the equivalents in Italy of bands of limestone known in the Pyrenees as "Marbres de St. Béat". The latter have been shown to be of Carboniferous age by M. Garrigou, whilst M. Coquand has found shales with Coal-measure plants lying *above* the marble beds of the Apuan Alps. The Carrara marbles must therefore now be regarded as metamorphosed saccharoid Carboniferous limestone, below which lie the crystalline schists of Serravezza.

Comptes rendus, Académie des Sciences, 1874, vol. lxxix. p. 411.

PAPER FROM SPHAGNUM.

Packing-papers and paste-boards up to three-fourths of an inch in thickness are manufactured by M. Stiemer, from a description of moss (*sphagnum*) of which there is a bed four square German miles in extent, at Zehlaubruch, near Königsberg, in East Prussia. The paper is reported to be very strong, to take a good surface, not to heat or get musty when exposed to damp in store, to turn the wet well, and in every way to be well adapted for packing hard-ware and other heavy goods, for bookbinding, and similar purposes. *Allgemeine Industrie- & Kunst-Zeitung. No. 6, 1875.*

NEW FIRE EXTINCTOR.

Experiments have lately been made at Schaffhausen with a new extinctor invented by G. Zuber. It is a cylinder of stout sheet iron, fitted with a hose, and containing 25 measures (42 English gallons) of water, in which is dissolved $^{3}/_{4}$ kilog. of bicarbonate of soda. A tube containing $^{1}/_{2}$ kilog. of concentrated sulphuric acid is screwed into the cylinder, and it is ready for use, and will so remain for a twelvemonth or more. When required it is only necessary, by turning a handle, to empty the sulphuric acid into the water; chemical action at once commences, a pressure equivalent to six atmospheres is set up within the cylinder, and the water is ejected in a column 40 or 50 ft. high, at the end of 30 ft. of hose. The water, being highly charged with carbonic acid has a powerful effect in stifling flame, and as every surface on which it falls becomes coated with a spray of sulphate of soda, the spread of the fire is materially checked.

Neue Deutsche Gewerbe-Zeitung, No. 1, 1875.

CEMENT-PAINT FOR CARTON-PIERRE.

Mack (oil and varnish manufacturer at Augsburg) has patented in Bavaria, the following process of painting carton-pierre. The cement-paint used for the purpose is composed of 2 parts washed graphite, 2 parts red lead, 16 parts freshly prepared cement, 16 parts sulphate of barium, 4 parts protoxide of lead, 2 parts alkoholized white litharge. The paint must be put on as soon as the roofing is securely fastened, choosing the dry season and a sunny day. Care must be taken to put it on well over the joints; it is recommended that an extra coating of paint should be given to the portions that overlap each other, so as to render them watertight. The cement-paint is best laid on with a broad stiff brush mounted on a handle a yard long, so as to be applied in a standing position, but an ordinary paint-brush will do. As a rule, two coats are put on. The first coat whilst still wet is covered with an even layer of fine dry sand sprinkled over it through a sieve. This is done bit by bit, as the roof is painted, so as to prevent the workmen stepping on the wet paint. The second coat is put on about a week later, the sand which has not stuck fast being first swept off. The second coat is not sanded. It is merely intended to combine with the under coat and form a durable waterproof surface, which will prevent the evaporation of the tar-oil, the usual cause of the failure of carton-pierre roofing, and present a good appearance as well. *Bayrische Gewerbe- und Industrie-Blätter, 1874.*

VARNISH FOR METALLIC SURFACES.

Loremy & Grisey (represented by Dufrené, Paris) patent a new method of decorating metallic surfaces, inlaid on wood or otherwise. A coat of spirit varnish, which has been previously coloured to any desired shade by the admixture of one or more colouring matters, is laid over the metal wherever required. Applied to gilded or silvered surfaces, or to those of alloys, &c., the process produces novel effects. *Bull. de la Soc. Chim. de Paris, xxiii, 2, 1875.*

CEMENT FOR MARBLE, ALABASTER, &c.

Take 12 parts of Portland cement, 6 parts slacked lime, 6 parts fine sand, 1 part infusorial earth, and mix into a thick paste with silicate of soda. The object to be cemented need not be warmed. The cement sets in twenty-four hours, and the fracture can then hardly be detected. The cemented portions are harder than the rest, and the fracture cannot by any chance be reopened.

Polytechnisches Centralblatt, v. xxviii.

SOLUBLE GLASS FOR FLOORING.

Broichmann recommends the use of soluble glass for flooring, hearths, &c. It is durable, and a safeguard against fire. The surface to be covered should be swept quite clean and dry, and a preliminary coating of soluble glass and powdered gypsum, made into a thick paste, put on. Over this, when dry, is poured another coat of soluble glass of the consistency of syrup; and the operation is finished. If it be thought desirable to colour, the requisite tint should be laid on, when the surface of the glass is dry, with mineral colours, mixed with equal parts of water and skim-milk. Vegetable colours are unsuited for the purpose, as they would be affected by the alkali in the glass. When the colour is dry, a final coat of soluble glass is poured over it. The glass darkens the colours beneath it, for which allowance must be made in choosing the shade to be employed. The surface should be rubbed down, and kept well polished with oil. The material is recommended for the floors of ball-rooms. It is easily cleaned, and saves the trouble and expence of waxing which is necessary with polished wooden floors.

Allgemeine Industrie- und Kunst-Zeitung, No. 4, 1875.

INDIA-RUBBER SOLUTION.

Caoutchouc is well washed with water to remove dirt and then cut under water into slices about a centimetre thick; these are pressed between rollers, and the thin sheets thus produced torn into strips and dissolved in the mixture of benzol and turpentine in the following proportions:

India-rubber	26 parts
Benzol	50 „
Turpentine	70 „

The solvents must be free from dissolved grease. Lampblack or other colouring matter can be added if required. Chem. Centralblatt, 1874, 16. *Practical Magazine.*

VARNISH.

M. Zingler patents the following process, consisting in dissolving camphor in bisulphide of carbon, mixing the solution with powdered gum copal, or other hard gum, and afterwards adding either camphor or methylated spirit or both. After the materials have been thoroughly agitated until the whole of the gum is dissolved, the product is a spirit varnish. Oil varnish is produced by dissolving linseed or other drying oil in camphor or in methylated spirits or in a mixture of these; and this compound is mixed with the spirit varnish above described. With these spirit and oil varnishes can be mixed other gums or resins.

Practical Magazine.